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Copy For Central Intelligence Agency

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(COVER)

Head: DIRECTORATE OF SCIENCE AND TECHNOLOGY
Central Intelligence Agency

Subhead: Careers that can make a difference.

Head: WORKING AT THE LEADING EDGE OF TECHNOLOGY

Copy: You have invested time, money and effort in developing your career potential. Now, you want a career in which you can be sure that your potential will be fulfilled -- and rewarded. The Central Intelligence Agency offers you that and more. We offer a chance to make a positive contribution to national security and world peace, a chance to embark on a career that can make a difference.

A professional career with the Directorate of Science and Technology (DS&T) will often mean exploring technology that is well beyond the state of the art. As a DS&T professional you may be working to solve

an immediate problem... you may be applying personal initiative to develop technology that will answer an anticipated need ... or you may be working on long-range concepts that are far beyond the purview of academia and private industry. We do all these things and more. It is an exciting environment, full of the enthusiasm that comes naturally when scientific and technical professionals are encouraged to put their creativity and innovation to full use.

Subhead: <u>The Directorate of Science and Technology (DS&T) is the technical arm of the CIA</u>.

Copy: The Directorate of Science and Technology is one of the four major components of the Central Intelligence Agency. The other three directorates have the primary roles in operations, analysis and administration. The DS&T has a wide range of responsibilities in the development and application of technology to meet intelligence needs. This includes exploratory research and development; the design, development and operation of both large-scale systems and specialized equipment; and the collection, processing and analysis of print, broadcast, photographic and signal intelligence.

It is an intelligence function with a long history and proud tradition.

Subhead: The historical role of technology in intelligence.

Copy: Collecting and evaluating information about one's environment and the threats it may contain has always been critical to man's survival. As early as the 5th Century BC the Chinese military strategist Sun Tzu recognized the importance of good intelligence. "To win 100 battles is not the acme of skill. To find security without fighting is the acme of skill."

Throughout history, as technology has developed it has been applied to the intelligence-gathering process. Intelligence professionals were assisted by developments such as code-breaking techniques and tools, invisible ink, the telescope, camera, and the telegraph. Basically, however, the technology was simple and the intelligence was focused on military concerns until well into the 1900s.

Since the establishment, in 1947, of the Central

Intelligence Agency, the world has changed considerably. From an initial military focus, the intelligence effort has expanded to all areas of international concern. More and more data are required to effectively evaluate the capabilities, intentions, and resources of potential adversaries. The technological revolution since the founding of the Agency has provided the means to collect and evaluate this type of information. DS&T has grown from a small part of CIA to a major directorate with the mission of devising better means fo collecting and utilizing intelligence, via technical means, against both current and future threats.

Subhead: <u>DS&T plays a crucial part in the intelligence process</u>.

Copy: The "business" of any intelligence organization is the collection, processing, analysis and presentation of information. Within CIA, the Directorate of Science and Technology has a role in each of these intelligence functions. We conceptualize and develop new technologies to aid in intelligence collection and to support agents in the field. We apply the most advanced

technical innovations to aid in information processing and analysis. And we develop advanced technical means to get the intelligence and analysis to senior policymakers in the most useful form.

DS&T professionals support the highest echelons of the U.S. Government. All national policymakers depend upon reliable and comprehensive information about world events. The technical means developed within DS&T enhance the quality of the collection, analysis and presentation of the information upon which decisions of major importance are founded.

Subhead: How DS&T is organized.

The diverse activities of DS&T are interrelated and may be divided into two main functions: (1) information collection, processing and analysis, and (2) the development of supporting technology. The first involves information gathered from various sources -- foreign broadcast and print media, signals, and photography. The other main category of DS&T activities involves the conception, development and production of the most advanced technologies and systems to

support the collection, processing and analysis of information.

Head: A CHALLENGING CAREER WITH UNEQUALED OPPORTUNITIES

Copy: In the DS&T you will be working with the best -- the best people in a wide range of technical and scientific disciplines and in the best environment available. You will be dealing with technologies as advanced as any found in private industry or academia, while interacting with top university and industry specialists. Many DS&T staff members participate in interagency intelligence committees and working groups with high visibility within the intelligence community.

Subhead: Advantages are unique ... and opportunities for advancement are many.

Copy: While working with the best people and resources, you will also find that DS&T allows its professionals a broader scope of responsibility earlier than is generally the case in private industry. DS&T officers

are often project managers, guiding their programs from conception to application. There may be fewer constraints than in the commercial sector, because national security often calls for one-of-a-kind, limited-production developments. Unique problems demand unique solutions. And our engineers and other professionals have the most advanced resources and the responsibility to use them in achieving those solutions.

Along with early and comprehensive responsibility can come rapid advancement and many other advantages:

- Promotions are competitive and based on your accomplishments. You are given additional responsibilities as soon as you are ready to assume them.

- You can select the career direction you prefer. You may specialize in one field or subject, expand your expertise to cover several fields, or concentrate on developing managerial skills. And you may switch career directions as your career progresses and your interests change.

- You will be working on important projects at the leading edge of your field of interest.

- You may have direct contact with senior U.S. officials and policymakers as an important part of your job.

- You will associate with senior experts in your field, not only at the CIA but also in other government agencies, in universities, and in private industry.

- You will have access to extensive information.

- You may have opportunities for travel and overseas assignment.

- Some persons who join us directly from college will enter the Career Training Program, which involves intensive training and provides a broad understanding of the varied aspects of CIA's mission.

Subhead: Career benefits and continuing training are excellent.

Copy: We seek to offer you salaries and career benefits competitive with those of academic institutions and private industry. Our grade-scale system is similar to that of the Civil Service, and there is ample provision for rapid advancement based upon merit. There are also several awards systems which provide for additional recognition of exceptional performance.

Staff members participate in excellent life and helth insurance programs and benefit from generous provisions for annual leave and sick leave. Upon retirement, you may be eligible for benefits under the Civil Service Retirement Act. Positions that involve overseas assignment include pay differentials, cost-of-living and housing allowances, 100% medical and hospitalization coverage, educational allowances for children, and liberal home leave.

DS&T supports graduate study, provides a variety of training courses throughout your career, and offers opportunities for sabbaticals.

You learn on the job by tackling increasingly demanding projects and through interaction with senior colleagues and national leaders. You also increase your knowledge and capability by formal training. We encourage and support advanced study at universities and offer you a wide range of specialized courses given internally. This emphasis on self-improvement and professional development continues throughout your career.

As part of your training and career growth, you may have the opportunity for foreign travel or for temporary assignment abroad, although willingness to serve abroad is not a requirement for most positions in the DS&T.

Many of our professionals have experience in private industry, academia, or other government agencies. Interchange with outside organizations for purposes of career growth and professional skill improvement is encouraged.

DS&T staff members actively participate in professional organizations, conferences and symposia and may sometimes publish the results of personal research.

Subhead: Washington, D.C. is your home base.

Copy: The CIA Headquarters is located in suburban Virginia, only seven miles from Washington, D.C. Most DS&T offices are outside the Headquarters area, at several locations in Washington and Virginia. There is a wide choice of where to live -- in the city of Washington, in the adjacent suburbs of Virginia or Maryland, or in the countryside.

Washington, D.C., one of the most beautiful cities in the country, is a highly cosmopolitan area. It is home to several fine universities, the Smithsonian Institution, and many other excellent museums and art galleries. Theater and music in Washington at the Kennedy Center, Wolf Trap, the National Theater and elsewhere are second to none.

Washington and its surroundings have fine dining, shopping, and top quality sports teams, both college and professional. Cultural, historical, and entertainment activities abound ... and the seashore and mountains are only a few hours away.

Subhead: Challenging positions are available in many disciplines.

Copy: The Directorate of Science and Technology seeks applicants from a wide variety of disciplines and experience. Areas of opportunity in many of these disciplines are described in detail on subsequent pages. If you have a bachelor's degree, master's degree, or a doctorate in a scientific or technical subject -- or skills and experience in any of the other areas or disciplines in the following list -- the chances are good that we can offer you an interesting career.

Automated Manufacturing/CAD/CAM

Business Administration

Chemistry/Chemical Engineering

Communications

Computer Science

- ADP
- artificial intelligence
- data base management
- expert systems
- hardware and software design

- networking
- operations
- programming
- systems analysis

Contract/Project Management

Crafts & Trades:

plastics, leather, wood, tools and dies, printing, engraving, art, papermaking, bookbinding, ceramics, modelmaking, inks and dyes, cabinetmaking.

Economics/Econometrics

Electro-optics

Engineering

- aeronautical
- aerospace
- civil
- design
- electrical/electronic
- general
- human factors
- industrial
- mechanical
- nuclear
- structural

Foreign Area Studies

Geographic

Graphic Design/Illustration

History

Imagery Analysis

International Relations

Journalism

Languages

Laser Technology

Library/Documentation Science

Life Sciences

Materials Science

Mathematics

Medicine

Microelectronics

Military Science

Modeling and Simulation

Photogrammetry

Photography/Video

Physics

Political Science

Power Source/Storage Technol

Psychology

Radar/Antenna Design

Satellite Technology

Sensing Technology

Signal Processing/Analysis

Social Science

Telemetry

Head: INFORMATION COLLECTION, PROCESSING, AND ANALYSIS PUT CRITICAL FACTS INTO THE HANDS OF POLICYMAKERS.

Copy: The Directorate of Science and Technology plays

a central role in the intelligence process in a number of ways, one of which involves worldwide technical collection, processing and analysis of information. This information -- the basic ingredient of all intelligence -- comes in a variety of forms.

Subhead: International open-media information processing provides an overview.

Copy: All foreign print and broadcast information has potential intelligence value. Radio, television, newspapers, and periodicals are openly published or broadcast internationally every day. This information is carefully monitored through high frequency receivers, satellite channels, subscriptions, news agencies, wire services, foreign data bases, and other overt means. Articles, broadcasts and books selected for translation and transmission to the United States are part of a critical information pipeline for national policymakers and intelligence analysts.

It is the role of the Foreign Broadcast Information

Service (FBIS) to monitor, select, process, translate, edit, analyze and disseminate a huge volume of collected information. The approximately 300,000 words processed every day are distributed via an unclassified wire service and a daily report with eight regional volumes. Many disciplines are involved, including linguists, editors, analysts, communications specialists, data base managers, experts in automated data base search and retrieval, and engineers and technicians for maintenance of overseas installations. Overseas travel or assignment is part of many FBIS career positions.

Subhead: Worldwide signal collection and analysis broadens our world view.

Copy: Signal intelligence, a vital element in maintaining our knowledge of the current state of world affairs, is a product of the Office of SIGINT Operations (OSO).

This is a specialized science. It requires the collection, processing and analysis of signals, inadvertant electromagnetic radiation and other signals-related data and being responsive to

technological advances in foreign communications facilities and practices.

The OSO mission demands that we work at the forefront of appropriate technologies. We develop, operate and maintain highly sophisticated equipment which allows us to perform signal collection, processing and analysis with maximum reliability and efficiency.

Career positions include electronic engineers, physicists, computer programmers, SIGINT operators, electronic technicians, operations analysts, mathematicians, signal analysts, linguists, and communications analysts. Opportunities for foreign travel or assignment exist for selected positions.

Signal intelligence is of direct concern to the President, National Security Council, Joint Chiefs of Staff, and others involved in the shaping of national policy, as well as to analysts throughout the intelligence community responsible for providing multi-source information and analysis on issues of national security.

Subhead: Comprehensive imagery interpretation and analysis help clarify our picture of world affairs.

Copy: Visual imagery also plays a vital role in the intelligence process. The images come in all forms and from a wide array of sources -- newspapers, hand-held cameras, aircraft, satellites, television, electromagnetic devices. It is the role of the National Photographic Interpretation Center (NPIC) to analyze imagery from these varied sources and to provide basic intelligence data on crucial subjects such as military forces, military equipment production, arms control and natural disasters.

Imagery analysts have the job of interpreting and evaluating the significance of the imagery received. Our analysts are largely liberal arts and social science generalists, with backgrounds in international affairs, economics, political science, history, geography, earth sciences, area studies and other disciplines. The imagery analyst develops expertise in specific issues and geographic regions, coordinating analyses with other experts in the intelligence community and contributing to published intelligence reports.

Imagery scientists are needed to enhance the quality of some imagery, to conduct engineering studies on imaging systems and equipment, to provide measurements from the imagery, and to develop, modify, and maintain specialized equipment. These tasks involve work with the latest image science equipment, including measuring comparators, image digitizers, digital image displays and advanced computers. Image science positions require a background in mathematics, electrical and electronic engineering, photographic science, statistics, photogrammetry, remote sensing, physics, computer science, or digital signal processing.

Additional personnel are needed to support the analytical and reporting tasks of NPIC. Positions are available for individuals with varied academic and work backgrounds, including computer scientists, data base managers, photographers, graphic artists, editors, librarians, researchers, and model makers. All these professionals have many opportunities within NPIC to exercise innovative approaches to the handling and analysis of large amounts of critical information.

Head: THE DEVELOPMENT OF SUPPORTING TECHNOLOGY IS THE FOUNDATION OF TECHNICAL INTELLIGENCE COLLECTION.

Copy: Technology is constantly changing, evolving, and expanding. The activities of DS&T professionals are prominent in this process of change, where working with concepts and technologies beyond the state of the art is our norm.

DS&T activities in technology development are diverse, ranging from long-term research and development to the creation of technical support tools for case officers and agents in the field.

Subhead: Long-term basic and applied research develops tomorrow's technology.

Copy: Although every office in the Directorate of Science and Technology pursues some research, the role of the Office of Research and Development (ORD) is unique. ORD is the "corporate" research arm of the Central Intelligence Agency, serving all of the CIA and answering the future technology needs of the entire intelligence community.

The role of ORD is to bring today's and tomorrow's technology to bear in fulfilling the overall mission of the CIA. ORD provides the methods, techniques, and systems concepts and designs to support the varied functions of intelligence. We perform exploratory research, pushing beyond the state of the art, and developing and applying technologies and equipment more advanced than anything commercially available. Like all the work within DS&T, it is highly specialized, but the frontiers are open-ended. Creativity, innovation, and imagination are prime requirements.

The work of ORD involves applied research, development, testing, and evaluation of a wide spectrum of technologies and methodologies. These include the physical sciences, communications, sensors, semiconductor applications, artificial intelligence, image understanding, operations research, process modeling, data base management, high-speed computing, and decision-making and inference. Any and all technologies with a potential intelligence function are pursued, generally to the prototype or demonstration of feasibility level. This involves close project management contact with many of the largest private industry contractors in the

nation and the opportunity to work with the latest equipment and the most expert people in government, academia, and business. Because of the advanced level of work in ORD, graduate degrees are strongly preferred, as is professional experience.

Subhead: Systems development and engineering takes programs from concept to product.

Copy: The Office of Development and Engineering (OD&E) pursues research and development with specific and often immediate applications to meet the needs of national-level policymakers. OD&E provides total systems development for major systems -- from requirements definition, through design, engineering, and testing and evaluation, to implementation, operation, and even support logistics and maintenance. These are generally large state-of-the-art systems that are not available commercially or in private industry.

It is exciting and demanding work with a very high level of technical challenge. OD&E requires a wide variety of disciplines in advanced areas such as

laser communications, digital imagery processing, real time data collection and processing, electro-optics, advanced signal collection, artificial intelligence, advanced antenna design, mass data storage and retrieval, and large systems modeling and simulation. Our work includes totally new concepts and systems as well as system upgrades. Because we work closely with many of the most highly regarded private contractors in the nation, scientific and technical professionals who have contract management skills are highly valued.

Much is expected, but much is offered in return, including early responsibility and a chance to work on very large and advanced systems from conception to completion. Our engineers have more independence than in most private industry positions; they operate with authority for not only technical matters but scheduling and production changes as well.

Our challenge is to anticipate and answer technical requirements of the national intelligence community. It's an uncommon challenge for the professional with uncommon ambition.

Subhead: Technology application and modification supports immediate intelligence collection needs.

Copy: Despite the huge advances in technical collection systems, human information-gathering activities remain an indispensable part of the intelligence process. To increase the scope, effectiveness, and safety of such activities through technical means is the role of the Office of Technical Services (OTS).

Like other DS&T offices, the work of OTS involves development and engineering, both in our own advanced facilities and through outside contractors. We oversee the design, development, evaluation and deployment of specialized and unique equipment to ensure it will withstand rigorous field and operating conditions. OTS scientific and technical professionals involved in these efforts are active in areas of analog, digital and satellite communications, still photography, video and image enhancement, chemical imagery, coding and decoding devices, and various aspects of modern computer technology.

Other OTS personnel apply a wide variety of crafts and skills in support of the collection process. Graphic artists, locksmiths, wood technologists, and experts

in working with plastics, leather, paper, and machine tools all contribute to the OTS effort -- as do other professionals with backgrounds in languages, international relations, military skills, document analysis, and many other specialties.

OTS is a fast-paced, dynamic environment with particular appeal to experienced engineers as well as to recent graduates who want hands-on experience in basic engineering and other disciplines. OTS offers extensive in-house training and encourages its officers to seeks outside educational opportunities. Overseas assignments are available for some OTS personnel. OTS officers must be inventive, flexible, and able to think on their feet -- technical specialists with an interest in hands-on problem solving. The work is demanding but never boring.

Subhead: Unique requirements call for unique individuals.

Copy: The challenging work undertaken by all the DS&T offices is unlike what you are likely to find anywhere else.

It offers many opportunities for individual initiative, as well as creative teamwork, applied in an exciting environment where your personal responsibility and involvement with projects are at their maximum. It is work that is critical to our national security and that provides great personal satisfaction.

Subhead: Explore a career with the Directorate of Science and Technology.

Copy: Experienced professionals and college students who are interested in a career with the Central Intelligence Agency are invited to apply for employment.

To qualify for a position with the DS&T you must be a native U.S. citizen or have been a naturalized citizen for at least five years. If you are married, there is a similar requirement that your spouse has, or is acquiring, U.S. citizenship.

Because of the nature of our responsibilities, we must conduct a security investigation of each applicant. For this reason, it is important that you

contact us as far ahead of the time you want to start working as possible.

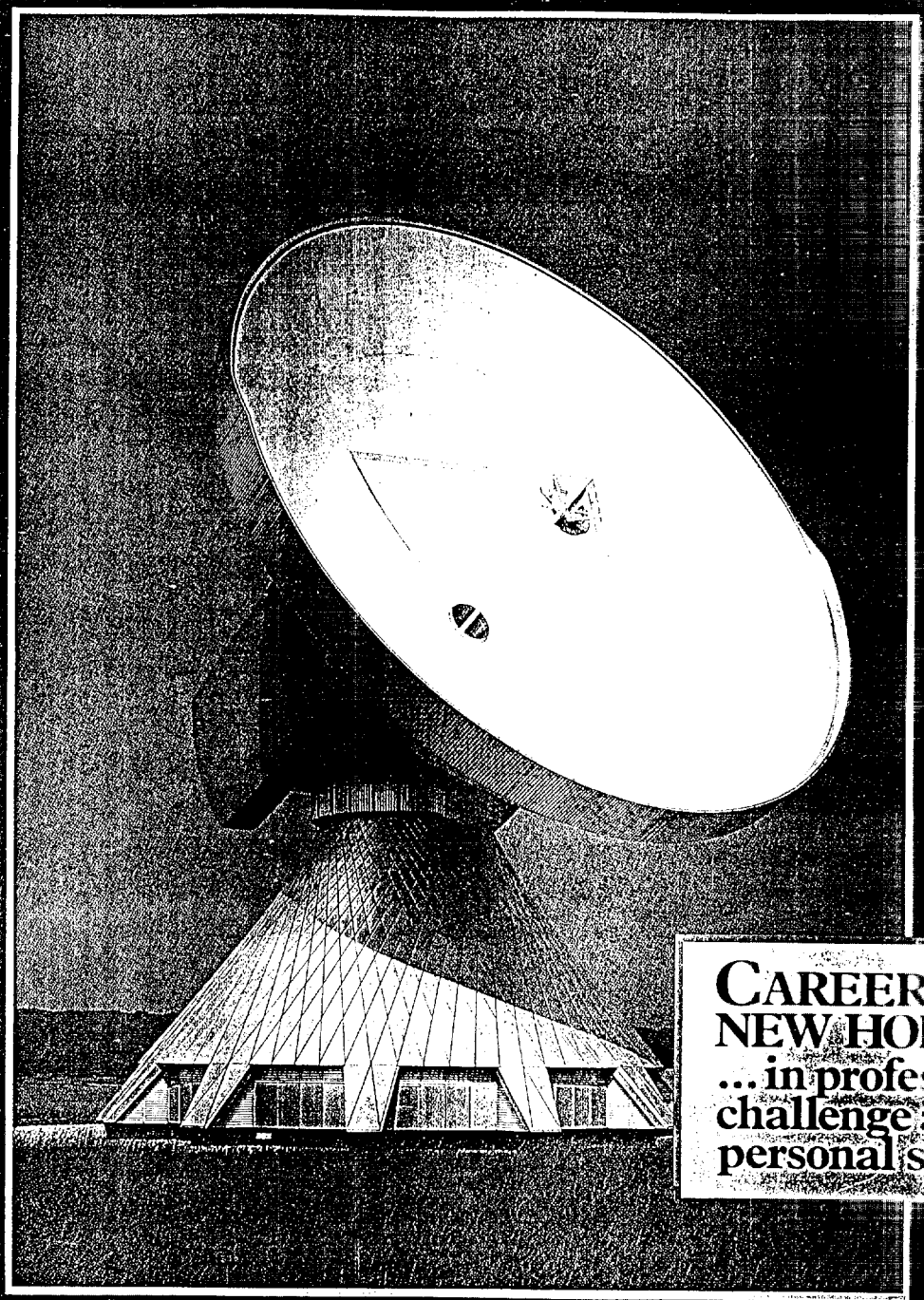
To apply, write to the Director of Personnel, Central Intelligence Agency, Washington, D.C. 20505. Enclose a resume of your education and work experience and request preliminary application forms.

Or, if you are in college, see your Placement Officer (preferably six to nine months before graduation) and request an interview with the CIA representative who visits your campus or whose regional office may be situated nearby.

We encourage you to investigate the personal and professional potential a career with DS&T may hold for you. If you are the right person for the unique challenges and opportunities we offer, we are sure you can't find a career like it anywhere else.

CIA is an Equal Opportunity Employer.

Electronic and Telecommunications Engineers,
Computer Systems Programmers and Analysts,
Mathematicians, Communications Specialists,
Technical Support Personnel



CAREERS WITH NEW HORIZONS
... in professional challenge and personal satisfaction

Office of SIGINT Operations

Directorate of Science and Technology, Central Intelligence Agency

What we do.

The Office of SIGINT Operations develops, operates, and maintains sophisticated equipment required to perform collection and analysis tasks with maximum efficiency.

The work is important... to you and the United States.

Your assignments will be professionally rewarding to you because you will contribute at the leading edge of your particular technology. And you will have the resources available that allow you to function at the peak of your creative capabilities.

Your contributions will also be of vital importance to our nation. The information collected will be used by the President, the Cabinet, the National Security Council, and other top level decision makers to formulate American policy on issues of vital interest to the United States. As an OSO staff member, you will be close to the heartbeat of our government.

The focus is on excellence... absolute excellence.

CIA's mission demands that we work at the forefront of technologies. We simply cannot afford to be second best.

So our engineers and scientists are constantly developing state-of-the-art techniques hardware, software, and systems. They also have an opportunity to share in the development and maintenance of this hardware. While we draw on the resources of private industry and universities to assist us in this development, OSO engineers and scientists have overall project responsibility. We specify, direct, and control each project. And you will be provided excellent support and superb laboratory facilities.

In short, CIA gives you personal and career opportunities rarely found elsewhere. And we place a premium on your ability to think for yourself, to think creatively, and to exercise sound judgment.

Career appointments exist in several disciplines.

ELECTRONIC AND COMMUNICATIONS ENGINEERING

Responsibilities include technical management of hardware and software R&D projects for advanced analog and digital computer and communications systems. You may also be involved with the design, production, and operation of transmitters and receivers. These positions require the ability to develop technical solutions to complex problems in telecommunications and/or computer systems.

COMPUTER APPLICATIONS DEVELOPMENT

Positions exist for application programmer/analysts with experience in the design, development, and operation of large interactive application systems, database management systems and applications development, microprocessing applications, artificial intelligence, pattern and data analysis, intelligent knowledge-based systems, simulation and modeling, and graphics systems development.

COMPUTER SYSTEMS DEVELOPMENT

Positions require experience in computer systems architectures, network and teleprocessing systems, data communications hardware/software architecture, operating systems design and development, digital design, hardware/software selection, computer switching, performance tuning, microcode, firmware and compiler development, and computer security procedures and practices.

COMMUNICATION

Positions require experience in one or more of the following: RF/HF radio, Morse intercept, radio-teletype operations, satellite communications, cryptographics.

TECHNICAL COMMUNICATIONS SUPPORT

You will be engaged in installation and maintenance of communications equipment including transmitters and receivers ranging from low frequency to millimeter wave as well as high-speed data transmission equipment.

Required qualifications.

Professional appointments are available for persons with Bachelor, Master, and Ph.D degrees, as well as those with technical training equivalent to an academic degree. Positions reflect different levels of experience.

Technical support positions require a degree from a technical trade school or high school plus appropriate on-the-job experience.

Your initial assignment will be at CIA's facilities in the greater Washington, D.C. area. Domestic and foreign travel is usually available. Some positions require long-term assignments in foreign lands.

You and your spouse must be citizens of the United States. Fluency in a foreign language or the aptitude to learn a foreign language, in certain occupational categories, is highly desirable, but not mandatory.

Training opportunities.

In order to maintain the highest standards of excellence while meeting the specialized requirements of the office, both on-the-job and formalized classroom training are available. Employees are encouraged to choose from a variety of operational, technical, and managerial courses in order to prepare themselves for progressively more responsible, career-enhancing assignments. Training is provided both internally and through the use of independent academic institutions.

Here's how you can learn more about a career and apply for a position...with the Central Intelligence Agency.

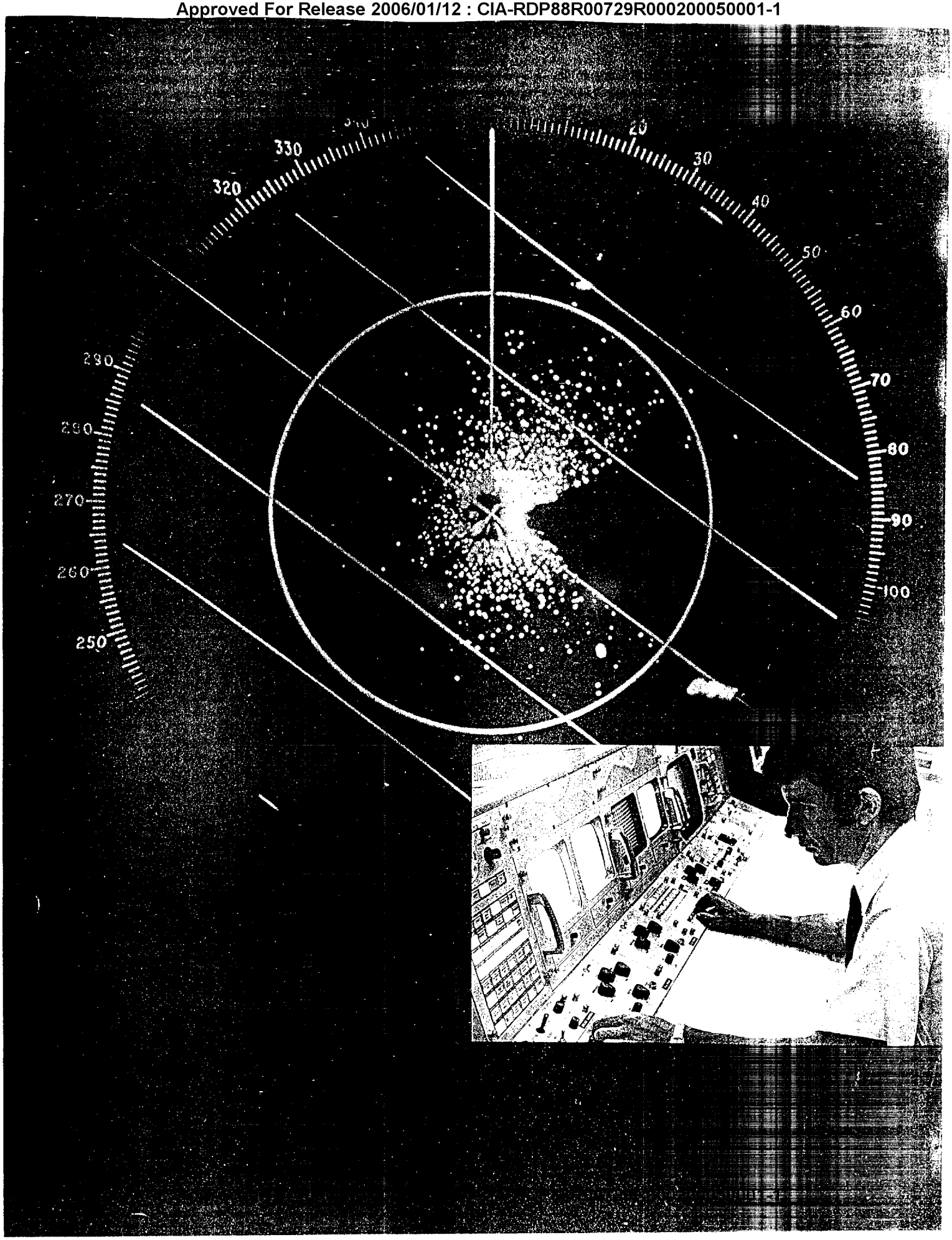
You are invited to explore the possibilities of a career appointment with the Office of SIGINT Operations of the Central Intelligence Agency.

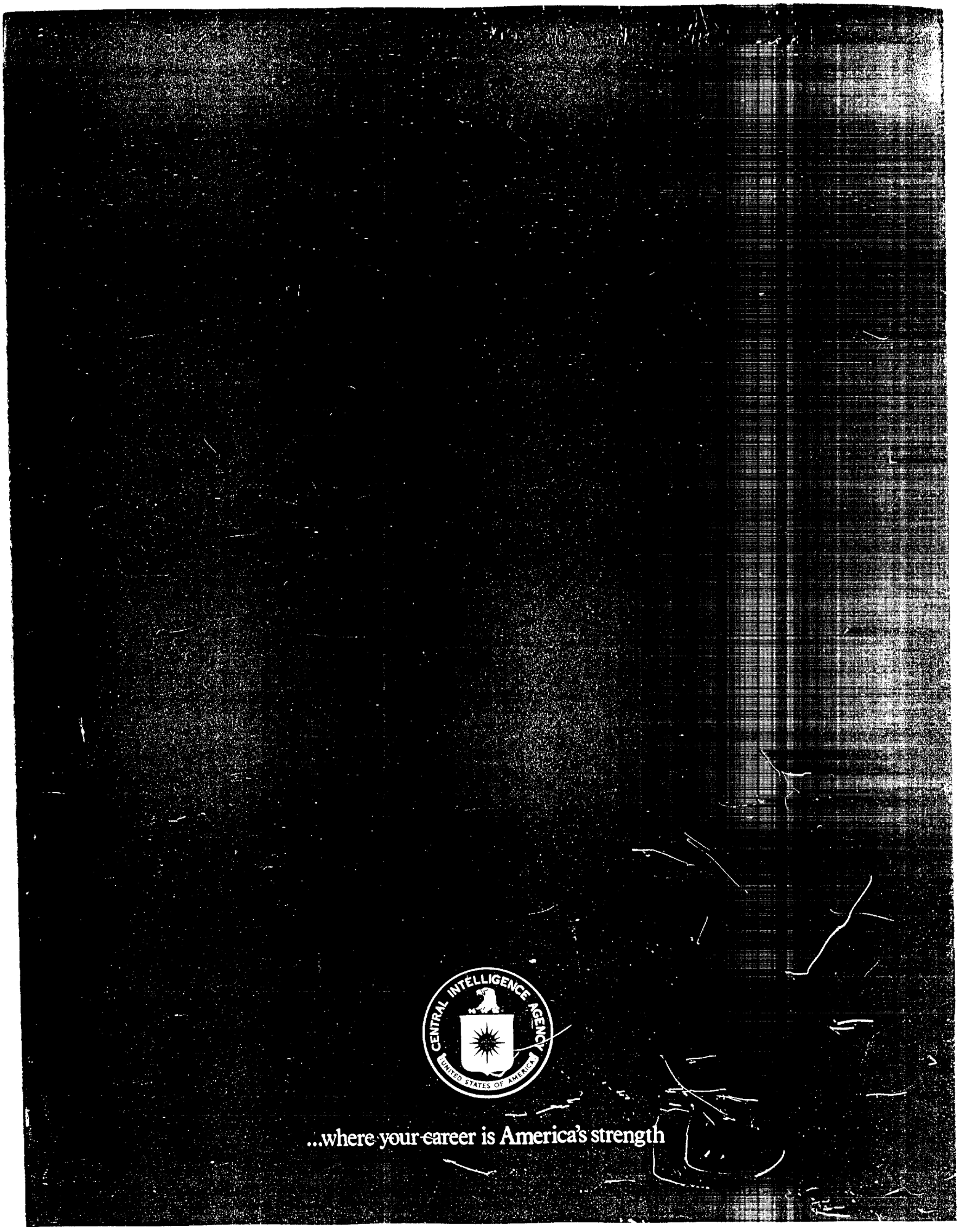
Because of the nature of our responsibilities, we must conduct an investigation of each applicant. For this reason, it is desirable that you contact us well ahead of the time you expect to start working.

For further details, write to the OSO Personnel Representative, P.O. Box 1073, Washington, D.C. 20013. Enclose a resume of your education and work experience and request preliminary application forms.

If you are in the Metropolitan Washington, D.C. area, you may arrange for an interview by calling 351-2028. The CIA Recruitment Office is located in Ames Center Building, 1820 North Fort Myer Drive, Arlington (Rosslyn), Virginia.

Or, if you are currently enrolled in a college or university, see your Placement Officer and request an interview with the CIA representative who visits your campus or whose regional office may be situated nearby.




CENTRAL INTELLIGENCE AGENCY
UNITED STATES OF AMERICA
...where your career is America's strength